

WHAT IS CLAIMED IS:

1. An optical pickup comprising:
a stem;
a substrate mounted on said stem;
a laser diode mounted on said substrate; and
a photodetector provided on said substrate for
detecting return light from an object to be irradiated;
said substrate being biased at a given voltage and
having an insulating member opposed to said stem.
2. An optical pickup according to claim 1, further
comprising:
a beam splitter unit having a polarization beam
splitter and a beam splitting element formed of a
birefringent crystal;
said photodetector comprising a first photodetector
for detecting a servo signal from a laser beam focused on
said object, and a second photodetector for monitoring an
output from said laser diode;
said beam splitter unit further having a hologram
lens for focusing monitor light to said second
photodetector.
3. An optical pickup according to claim 1, wherein
said photodetector comprises a PIN-photodiode.
4. An optical pickup according to claim 1,

wherein:

said laser diode has a first electrode opposed to said substrate with a first insulating film, a conductor film, and a second insulating film being interposed between said first electrode and said substrate.

5. An optical pickup according to claim 4, wherein said substrate comprises an Si substrate, and each of said insulating member, said first insulating film, and said second insulating film comprises an SiO₂ film.

6. An optical pickup according to claim 4, wherein said conductor film and said stem are connected by a first wire.

7. An optical pickup according to claim 6, wherein said laser diode further has a second electrode, said first and second electrodes being connected to said stem by second and third wires, respectively.

8. An optical storage device capable of at least reading information stored in an optical storage medium, comprising:

- a base;
- a carriage movable along said optical storage medium;
- a stem mounted on said base;
- a substrate mounted on said stem;

a laser diode mounted on said substrate;

an objective lens mounted on said carriage for focusing a laser beam from said laser diode onto said optical storage medium; and

a photodetector provided on said substrate for detecting at least a regenerative signal from a reflected beam from said optical storage medium;

said substrate being biased at a given potential and having an insulating member opposed to said stem.

9. An optical storage device according to claim 8, further comprising:

a beam splitter unit having a polarization beam splitter and a beam splitting element formed of a birefringent crystal;

said photodetector comprising a first photodetector for detecting a servo signal from said laser beam focused on said optical storage medium, and a second photodetector for monitoring an output from said laser diode;

said beam splitter unit further having a hologram lens for focusing monitor light to said second photodetector.

10. An optical storage device according to claim 8, wherein said photodetector comprises a PIN-photodiode.

11. An optical storage device according to claim 8,
wherein:

said laser diode has a first electrode opposed to
said substrate with a first insulating film, a conductor
film, and a second insulating film being interposed
between said first electrode and said substrate.

12. An optical storage device according to claim
11, wherein said substrate comprises an Si substrate, and
each of said insulating member, said first insulating
film, and said second insulating film comprises an SiO₂
film.

13. An optical storage device according to claim
11, wherein said conductor film and said stem are
connected by a first wire.

14. An optical storage device according to claim
13, wherein said laser diode further has a second
electrode, said first and second electrodes being
connected to said stem by second and third wires,
respectively.

15. An optical pickup comprising:

a stem;

a substrate mounted on said stem;

a laser diode for outputting a laser beam;

a photodetector provided on said substrate for

detecting return light from an object to be irradiated with said laser beam;

a dummy photodetecting region provided on said substrate adjacent to said photodetector;

a dummy electrode formed in said dummy photodetecting region so as to surround said photodetector; and

wiring for connecting said dummy electrode to a ground potential.

16. An optical pickup according to claim 15, wherein:

said photodetector comprises a first photodetector for detecting a regenerative signal from said return light, a second photodetector for detecting a servo signal from said laser beam focused on said object, and a third photodetector for monitoring an output from said laser diode; and

said dummy photodetecting region comprises a first dummy photodetecting region provided adjacent to said first photodetector, a second dummy photodetecting region provided adjacent to said second photodetector, and a third dummy photodetecting region provided adjacent to said third photodetector.

17. An optical pickup according to claim 16,

wherein said dummy electrode comprises a first dummy electrode formed in said first dummy photodetecting region so as to surround said first photodetector, a second dummy electrode formed in said second dummy photodetecting region so as to surround said second photodetector, and a third dummy electrode formed in said third dummy photodetecting region so as to surround said third photodetector.

18. An optical pickup according to claim 15, further comprising a light shielding member having light absorptivity formed on said substrate so as to cover at least said dummy photodetecting region.

19. An optical pickup according to claim 18, wherein said light shielding member comprises a polyimide film.

20. An optical storage device capable of at least reading information stored in an optical storage medium, comprising:

- a base;
- a carriage movable along said optical storage medium;
- a stem mounted on said base;
- a substrate mounted on said stem;
- a laser diode for outputting a laser beam;

an objective lens mounted on said carriage for focusing said laser beam from said laser diode onto said optical storage medium;

a photodetector for detecting at least a regenerative signal from return light from said optical storage medium;

a dummy photodetecting region provided on said substrate adjacent to said photodetector;

a dummy electrode formed in said dummy photodetecting region so as to surround said photodetector; and

wiring for connecting said dummy electrode to a ground potential.

21. An optical storage device according to claim 20, wherein:

said photodetector comprises a first photodetector for detecting a regenerative signal from said return light, a second photodetector for detecting a servo signal from said laser beam focused on said optical storage medium, and a third photodetector for monitoring an output from said laser diode; and

said dummy photodetecting region comprises a first dummy photodetecting region provided adjacent to said first photodetector, a second dummy photodetecting region

provided adjacent to said second photodetector, and a third dummy photodetecting region provided adjacent to said third photodetector.

22. An optical storage device according to claim 21, wherein said dummy electrode comprises a first dummy electrode formed in said first dummy photodetecting region so as to surround said first photodetector, a second dummy electrode formed in said second dummy photodetecting region so as to surround said second photodetector, and a third dummy electrode formed in said third dummy photodetecting region so as to surround said third photodetector.

23. An optical storage device according to claim 20, further comprising a light shielding member having light absorptivity formed on said substrate so as to cover at least said dummy photodetecting region.

24. An optical storage device according to claim 23, wherein said light shielding member comprises a polyimide film.

25. An optical pickup comprising:

a stem;

a substrate mounted on said stem;

a laser diode for outputting a laser beam;

a photodetector provided on said substrate for

detecting return light from an object to be irradiated with said laser beam; and

a metal layer provided on said substrate so as to cover at least a region adjacent to said photodetector, said metal layer having a surface modified so as to have light absorptivity.

26. An optical pickup according to claim 25, wherein said metal layer comprises an anodized aluminum film.

27. An optical storage device capable of at least reading information stored in an optical storage medium, comprising:

- a base;
- a carriage movable along said optical storage medium;
- a stem mounted on said base;
- a substrate mounted on said stem;
- a laser diode for outputting a laser beam;
- an objective lens mounted on said carriage for focusing said laser beam from said laser diode onto said optical storage medium;
- a photodetector provided on said substrate for detecting at least a regenerative signal from a reflected beam from said optical storage medium; and

a metal layer provided on said substrate so as to cover at least a region adjacent to said photodetector, said metal layer having a surface modified so as to have light absorptivity.

28. An optical storage device according to claim 27, wherein said metal layer comprises an anodized aluminum film.